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CHINA REPORT

AGRICULTURE

No. 131

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I. GENERAL INFORMATION

JOINT AGRICULTURAL, INDUSTRIAL, COMMERCIAL ENTERPRISES DISCUSSED

Beijing ZHONGGUO NONGMIN BOA [CHINA PEASANT NEWS] in Chinese 11 Jan 81 p 3

[Article: "What Are Joint Agricultural, Industrial, and Commercial Enterprises?"]

[Text] Once state farms began to operate joint agricultural, industrial, and commercial enterprises, they were well received and highly regarded by the broad masses of people, but there are still some comrades who are not quite sure about what joint agricultural, industrial, and commercial enterprises are, their nature, or their functions. To clarify matters, we interviewed Ministry of State Farms and Land Reclamation authorities concerned on this question.

Question: What are joint agricultural, industrial, and commercial enterprises? How did state farms begin trial operation of joint agricultural, industrial, and commercial enterprises?

Answer: Briefly stated, when both agriculture (or livestock raising) and some processing and marketing of agricultural byproducts are engaged in, such an enterprise with multiple coordinated operations is a joint agricultural, industrial, and commercial enterprise.

In its, "Resolution Concerning Various Problems in Hastening Agricultural Development," the party explicitly provided for the operation of joint agricultural, industrial and commercial enterprises by state farms. Under the leadership of local CCP committees and government units, all agriculture and land reclamation units in provinces, municipalities, and autonomous regions setting up trial units and formulating plans for trial operation of joint agricultural, industrial, and commercial enterprises, and this was how they got started by state farms.

Question: How are the state farm trial operated agricultural, industrial, and commercial enterprises faring at the present time?

Answer: As of the present time, 28 provinces, municipalities and autonomous regions throughout the country have set up 698 state farm test sites. These represent 34 percent of the total number of state farms in the national agricultural and land reclamation system. During March and April last year, the Ministry of State Farms and Land Reclamation established the Chinese State Farm Joint Agricultural, Industrial, and Commercial Enterprises Company. Last October, a joint agricultural, industrial, and commercial enterprises fair was held at the Beijing Agricultural Exhibition Building. Joint agricultural, industrial, and commercial enterprises have demonstrated strong vitality in test operation.

Question: Why does China want to run joint agricultural, industrial, and commercial enterprises?

Answer: Trial operation of joint agricultural, industrial, and commercial enterprises helps production in three ways.

First it hastens capital accumulation for the promotion of agricultural development. Current national investment in agriculture far from satisfies the needs of the development of agriculture. Operation of joint agricultural, industrial, and commercial enterprises is for the purpose of transforming the disjointed and irrational situation existing in the production, processing, and marketing of agricultural products, so that a portion of profits from processing and marketing of agricultural byproducts will be returned to the producers of the raw materials. Return of the money that should be made, and can be made, can both constantly expand the scale of production and the production capacity of large scale agriculture, livestock raising, and sideline occupations to develop and strengthen processing industries, and also increase material benefits, which will help rally the enthusiasm of personnel involved in agricultural production, thereby hastening the development of agriculture. For example, 1979 profits from joint agricultural, industrial, and commercial enterprises in Jiangsu Province totaled more than 29 million yuan, of which 82 percent was used as capital for agricultural production. In 1980, they triumphed over natural disasters to reap a bumper harvest in agriculture, and profits rose to more than 30.22 million yuan. Meanwhile, the taxes paid to the state also increased year by year. In 1979, taxes were 40 percent higher than in 1978, and in 1980, they again increased to 14.15 million yuan.

Second, it finds opportunities for labor that is surplus to agricultural production. In joint agricultural, industrial, and commercial enterprises in which production, processing, and marketing are a coordinated whole, and in which production avenues are numerous and broad, the labor superfluous to agricultural production can be systematically provided for in processing and commerce in joint enterprises, so that best use will be made of people and waste in the workforce will be diminished. Following establishment of joint enterprises by the Beijing Municipal State Farm, five specialized companies for industry, feed and fodder, farm machines, construction, and supply and marketing were set up.

In the construction company, in particular, the number of workers increased to more than 12,000. This enterprise has 518 large and small industrial plants, employing more than 30,000 workers.

Third, it enlivens the market. The commercial part of joint enterprises supplies goods promptly; quality is fresh; and prices are cheap, all of which are appreciated by the masses. Joint agricultural, industrial, and commercial enterprises in trial operation have built more than 1500 commercial network points that do almost 500 million yuan worth of business annually.

Question: What several organizational forms have the joint agricultural, industrial, and commercial enterprises already in operation taken?

Answer: Currently, three. One is the joint enterprise within the agricultural and land reclamation system in which the farms in an area jointly operate a joint, agricultural, industrial, and commercial enterprise. This type is operated on a

fairly large scale. As everybody knows, the Beijing, Tianjin, Shanghai, Chongqing, Shihezi and the Donghu and Xihu joint agricultural, industrial, and commercial enterprises are of this kind. Another is individually operated by a single farm whereby farms and farm and land reclamation plants are jointly operated. A second type is an economic unity of joint agricultural, industrial, and commercial enterprises, people's communes, and production teams. An example is the Chongqing Changjiang Joint Agricultural, Industrial, and Commercial Enterprise, which last year in conjunction with more than 800 people's commune production teams jointly operated the production, processing, and marketing of tea, fruits, and cow's milk. The third type is an economic amalgamation of joint agricultural, industrial, and commercial enterprises with other economic units, and other areas. An example is the lumber production and furniture manufacture jointly operated by the Guangdong Huguang Joint Agricultural, Industrial, and Commercial Enterprise and the Beijing Changxindian Furniture Plant.

Question: Operation of joint agricultural, industrial, and commercial enterprises holds many real advantages, but why were they first trial operated by state farms?

Answer: Operation of joint agricultural, industrial, and commercial enterprises and following the road of multiple agricultural, industrial, and commercial operations is not something that people subjectively desire, but it is an inevitable trend in economic development. Foreign experience has attested this point. Operation of agricultural, industrial, and commercial enterprises is a major policy in China's development of agriculture. State farms have a relatively good foundation; their level of mechanization is high; their commodity rate is high; their agricultural and livestock processing industry has a certain amount of development, and the degree of their specialization is fairly high. Consequently, they took the lead in the trial operation of joint agricultural, industrial, and commercial enterprises for the purpose of feeling the way, summarizing experiences, and playing an exemplary role.

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BRIEFS

SORGO IN NORTHERN CHINA—In 1976 and again in 1979, China introduced a group of sorgo varieties from the United States. Test plantings have shown that "Liou" and "Luoma" varieties possesses strong adaptability, and are suited for growing in north, northwest, and northeast China. Many places have used native methods to process sorgo, producing reasonably good crystalline sugar. Monitoring done by Zhongmou County in Henan Province showed 10 percent disaccharide in "Liou," and 7.5 percent monosaccharide for a 17.5 percent total sugar content. In "Luoma," disaccharides were 13 percent, and monosaccharides were 3 percent, for a total sugar content of 16 percent. Sugar content of these two varieties was fairly high, and they are superior varieties for the refining of sugar. Experiments have shown that each mu of sorgo produces 500 jin of grain, and 500 jin of sugar concentrate, which can be processed to produce more than 250 jin of sugar. Sorgo is drought resistant, withstands waterlogging, and produces high output even when grown on infertile, saline-alkaline soils. Sorgo grown on the infertile, saline-alkaline soil of Leting Prefecture in Hebei produced yields of 200 jin per mu. Grown on clay soils, sorgo also produced bumper yields. Sorgo has a short growing period. For "Liou," it is 103 days, and for "Luoma" 115 days. Grown in North China, sorgo will produce one crop annually; south of the Yangtze River, two crops may be grown. Sugar content of the stems and stalks of sorgo is 18 percent by weight, which is almost that of sugarcane, as a result of which people call it the "sugarcane of the north." Sorgo has a pure taste, and is fragrant, sweet and delicious, with quality that is higher than sugar from sugarbeets. If the juice crushed from sorgo is directly subjected to fermentation, it may be converted to alcohol, and each mu can produce more than 350 jin of 60 percent alcohol. [Text] [Beijing ZHONGGUO NONGMIN BAO [CHINA PEASANT NEWS] in Chinese 1 Jan 81 p 6] 9432

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NATIONAL

VICE MINISTER INTERVIEWED ON STATE OF AGRICULTURE

Hong Kong CHING-CHI TAO-PAO [ECONOMIC REPORTER] in Chinese No 6, 28 Jan 81
pp 4-5

[Article by Zhou Qifu 周启福 0366 39407: "China's Agriculture Progresses During Readjustment"]

[Text] In 1980, remarkable achievements were scored in readjusting China's national economy and agriculture battled successfully against natural disasters. At the beginning of the New Year, this reporter went to the Ministry of Agriculture, sited in Dongcheng [East City] of Beijing Municipality, to interview Vice Minister of Agriculture Zhu Rong and asked him to tell the domestic and international readers of this magazine about the readjustment carried out in China's agriculture during the past year and of the prospects for the new year. He readily agreed to receive this reporter.

Serious Natural Disasters Conquered

Vice Minister Zhu Rong began by discussing China's 1980 harvest. He said that last year China's agriculture continued to progress on the basis of the two bumper years of 1978 and 1979. Despite serious natural disasters, grain production last year was the second highest since the founding of the country, with output only 20-30 billion jin less than in the major bumper year before. There was an all-round bumper harvest in economic crops: cotton and sugar both increased by 10 percent or more over the previous year; oilseed crops increased output by over 10 million dan compared with 1979, tea was up by 260,000 dan, and mulberry silk cocoons increased by 14.8 percent, with total output exceeding the highest level in history; output of pork, beef and mutton also increased markedly, and milk, hides, feathers and eggs of livestock and poultry also increased.

Zhu Rong said that these kinds of agricultural outputs were really not easy to come by. Last year there were frequent natural disasters, affecting the main farming areas of eastern, central and north China to different degrees. During the first half of the year, temperatures were low in north China, while there was a major drought in the second half, when many rivers ceased flowing and reservoirs and ponds dried up. The maximum area hit by drought

in north China reached over 200 million mu. In broad areas of the south, there was continuous low temperature and rain from spring to summer, with little sunshine. Several famous big "stoves" along the banks of the Chang Jiang, such as Chongqing, Wuhan and Nanjing, only had a few hot days. During the summer there were continual rainstorms in the middle and lower reaches of the Chang Jiang, causing floods second only to those of 1954 and 1931. Despite the emergency work of large numbers of army men and civilians, over 130 million mu of farmland were flooded. Five strong typhoons struck the coastal districts of south China.

He said that even though the area affected by natural disasters last year was great and the number of people affected large, because of the bumper harvests of the previous two years and the prompt adoption of disaster relief measures by the state, grain prices throughout the nation were stable and proper arrangements were made for the livelihood of the people affected. Because of the bumper harvest of economic crops and the development of commune and brigade enterprises and household sidelines, it is estimated that the income of peasants throughout the broad countryside of China will increase above that of the previous year.

All-Round Development in the Realm of Agriculture

Vice Minister Zhu Rong pointed out that the ability of agriculture to thrive in a year of major disasters is inseparable from bringing into play the benefits in resisting drought and draining flooding of the large number of water conservancy works built in the over 30 years since the founding of the nation, but that another important cause is the carrying out of the policy of readjustment in the realm of agriculture. This has stimulated the initiative of the broad masses of cadres and commune members in the countryside.

At the end of 1978 the Third Plenary Session of the 11th CCP Central Committee drew up two agricultural documents and raised the purchase prices of agricultural and sideline products. In keeping with the entering of China's national economy into a period of development centered on readjustment, some "leftist" policies and irrational agricultural structures and cropping systems and the like in the realm of agriculture have begun to be improved. The pace of readjustment picked up in 1980. Most marked was that the countryside of the whole nation was freed from a series of "leftist" policies which had been carried out ever since the "Great Cultural Revolution," proceeded in light of the actual conditions of each locality, acted according to natural and economic laws and let each develop his own strong points. This has promoted the all-round development of agriculture, forestry, animal husbandry, sidelines and fishery.

The internal structure of agriculture was also transformed, and irrational agricultural arrangements were readjusted. Each locality paid attention to planting crops in light of local conditions and thoroughly making use of local natural resources. The nation began to change its one-sided stress on producing grain. Last year over 50 million mu of cultivated land were shifted

from grain to oilseeds and other economic crops. For example, the saline-alkaline content of the soil in Liucheng Prefecture in western Shandong Province is very high and is not suited to growing grain crops. For nearly 30 years, the peasants have been ordered to plant grain. The output has not been high and the income level of the peasants has been very low, making this one of the 10 poorest prefectures in the country. Last year this prefecture planted cotton on a large area and obtained surprising results. It is estimated that on the average each of the prefecture's 4.02 million agricultural population may receive an income from the collective of 100 to 150 yuan. The face of backwardness here is taking a progressive change for the better. The three provinces of Henan, Anhui and Shandong changed the cropping in the former course of the Yellow River and the sandy areas along the coast which in the past had very low grain yields into peanuts and other crops. They have obtained high yields. Peanut production alone increased by 8 million dan over the previous year.

Some technical policies in the realm of agriculture have also been put in order. During the "Great Cultural Revolution" period it was quite in vogue to talk of grain yields per mu "exceeding the Program [targets]" or "crossing the Chang Jiang," and to say that one must have "one pig per person," "one pig per mu" or use the "number in the pen at the end of the year" as a target. These technical targets which do not take into account the different conditions of different localities and which are unscientific and do not accord with reality have been cleaned away. The method of blindly pursuing targets had a bad effect on agriculture and animal husbandry. For example, the loessial plateau of the northwest is dry and has poor soil quality, so it is quite difficult to have per-mu grain output reach the "Program" target of 400 jin. The only way the peasants could reach this target was to open up new fields and have "Program-assistance fields" [whose grain output was reported, but whose acreage was concealed] over a large area. This made soil erosion much worse and destroyed the ecological balance. In order to pursue the target of number of cattle in pen at the end of the year, the herdsmen could not turn commodity livestock over to the state during the autumn when cattle and sheep are fat and strong, but had to wait until the next January or February. During that period a large number of livestock became emaciated or even died of starvation, due to the lack of fodder and the cold weather.

Economic Policies Guarantee the Smooth Progress of Readjustment

Vice Minister Zhu Rong said that since the Third Plenary Session the government has issued a series of policies on rural work. These policies represent the interests and demands of the peasants and have motivated them to produce. These policies have guaranteed the step by step forward progress of readjustment in the realm of agriculture.

At the beginning of last year the nation began to discuss how the peasants could get rich. The policies of the government calling on some prefectures, communes, brigades, teams and commune members to become rich first has greatly

won people's hearts. Letting people "stand out" is a wise policy for motivating the peasants and is a negation of the "leftist" egalitarian policy of "eating from a common pot" which was carried out for many years. The experience of the past year shows that, under the conditions of a general increase in the income of peasants throughout the nation, there are already a number of peasants who have relied on the collective and have become rich through using their labor in proper channels. They are building new houses and buying expensive goods such as television sets. Their living standards have gradually approached or exceeded that of an ordinary worker or staff member in the cities.

Last summer, the Central Committee issued Document No 75, making resolutions concerning matters such as the rural production responsibility systems. This document was warmly welcomed by the peasants. Various forms of production responsibility systems such as specialized contracting linking output to the calculation of remuneration, specialized teams, specialized groups and specialized households have been set up in the countryside, and the socialist principle of distribution according to labor has been carried out even better, with its results more and more apparent. This is an important reason why last year in the face of major disasters agriculture still achieved good results.

At the beginning of 1979, China raised the purchase prices of 18 farm products. Because of this the peasants received 8 billion yuan in benefits in 1980. This policy also stirred up the enthusiasm of the peasants for production. The government's policies on items such as privately retained land, privately retained livestock, privately retained trees and domestic sidelines have all been implemented.

Zhu Rong said that these policies on rural work were centered on readjusting the relationships between the state, the collectives and the peasants. At the same time that the interests of the state have been guaranteed, the powers of the collective have been enlarged, distribution according to labor has been carried out conscientiously and the commune members have had more freedom. All of this has enlivened the rural economy. In 1980, commune and brigade enterprises developed further, with total income increasing by 15 percent over the previous year. The average income received by the peasants from the collective and that from engaging in domestic sidelines both were the highest ever. Rural markets everywhere were lively, with sales and purchases both flourishing, a happy unprecedented scene.

Agricultural Production in 1981

Vice Minister Zhu Rong said that this year the entire national economy is centered on readjustment and stabilizing the economy so that it can continue to develop in a good direction. The work of the agricultural departments must revolve tightly around this center.

He said that we must strive for good results this year in agricultural production. An all-round development of agriculture, animal husbandry and

multiple operations is an important content and condition for doing a good job of economic readjustment and guaranting economic stability. China has over 900 million people, 80 percent of them in the countryside. We must let them have something to eat and to wear and let their lives improve from year to year. If we arrange our state's construction and economic livelihood on this base, a wonderful situation of stability and unity will appear throughout the nation.

He said that after the fall harvest last year the peasants seized the opportunity to develop farmland capital construction and built many small-scale water control projects and ancillary projects which yield benefits quickly. Among these, some are already producing benefits in winter wheat irrigation. The 410 million mou of summer ripening crops are growing quite well at present.

At the same time that he called for an all-round development in agriculture, animal husbandry and multiple operations, Vice Minister Zhu said that this year we must pay close attention to grain. With the exception of qi and xian which have animal husbandry or forestry as their main task and the main economic crop bases, everyone must put grain in first place. The pace of readjusting agricultural distribution cannot be done too hastily or too fast. Localities cannot base the readjustment of crop distribution on continuing to reduce the area of land devoted to grain and demanding that the state increase its supply of grain.

We must not only readjust the proportional relationships within agriculture in a positive and stable way, but we must also readjust the proportions within grain, increasing the proportion of drought resistant crops, soya bean and millet. We must gradually readjust the internal structure of animal husbandry and, while guaranteeing the development of hog rearing, give prominence to developing herbivorous livestock such as cattle, sheep and rabbits. This year the suburban areas of municipalities and mines must be even more active in building subsidiary foodstuffs bases and in developing vegetable production so as to guarantee the suburban supplies of subsidiary foodstuffs and vegetables.

Zhu Rong said that in the past two years serious attention has begun to be paid to rural scientific farming. Technical personnel have been respected and welcomed and many agricultural scientists have been invited to be advisers to the provincial-level agricultural leading organs. The peasants have also eagerly studied advanced cultivation techniques and methods and in many bookstores the supply of literature on agricultural science and technology cannot meet demand. At present the formulation of developing agriculture by relying both on policy and on science is sinking into people's hearts. During the new year, we must make great efforts to popularize scientific knowledge in the countryside and further bring into play the role of scientific and technical personnel to use science to propel the development of agriculture.

Zhu Rong said that for the past two years various localities have set up integrated agro-industrial-commercial complexes. The pilot project work in restructuring China's rural economic system has had some preliminary success. The peasants have gained from it and increased their incomes. This year we must do a good job of this pilot restructuring work in a positive and stable manner.

AUTHOR: HOU Guangjiang [0230 0342 3518]

ORG: None

TITLE: "Soil General Survey and the Problem of High Yield Over a Large Area"

SOURCE: Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY]
in Chinese No 6, 25 Nov 80 pp 1-7

ABSTRACT: Soil general survey is an expensive undertaking and its purpose must be to achieve high yield over a large area in order to justify the high expenditure of money and labor. On the subject of soil survey and its objective, the author has 5 viewpoints: (1) Soil and soil fertility should be studied from the viewpoint of soil being a unified environment for crops. (2) There should be an historical viewpoint to study the origin and development of the current problem. (3) There should be the viewpoint of reconstruction of nature. (4) There must be a viewpoint of returning what is taken out of soil back to the soil. (5) The soil must be regarded as being alive, almost an organic body, and pedology should be a part of biology. This paper is a lecture delivered by the author in Kunming on 16 May 80.

AUTHOR: HE Qingrui [6320 1987 3843]
WANG Junrui [3769 0193 6530]
LIU Xingye [5012 2502 6851]

ORG: All of Yunnan Provincial Academy of Agriculture

TITLE: "Preliminary Report of Breeding Dianrui 409 Hybrid Rice"

SOURCE: Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY]
in Chinese No 6, 25 Nov 80 pp 12-16

ABSTRACT: In view of the fact that singularity of male sterile line limits the range of utilization of hybrid heterosis and may result in large or small losses in production, the authors have attempted to use Taiwan geng rice No 3 to breed the Dianrui 409 male sterile line since the spring of 1973. The work has been carrying on in Hainan Island. This paper reports the successful process of producing the Dianrui male sterile line, that of breeding the Dianrui male sterility restoring line, and the general expression of the Dianrui 409 hybrid rice. The F_1 heterosis, the major economic characteristics, the utilization of F_2 , and the procedures of propagation and seed preparation are explained. The cytoplasmic origin of Dianrui 409 is different from that of Yanbai type male sterile lines which are currently being extended.

AUTHOR: None

ORG: Center of Cereal Crops, Yunnan Provincial Academy of Agriculture

TITLE: "Upland Superior Wheat Breed: Yunmai 29"

SOURCE: Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY]
in Chinese No 6, 25 Nov 80 pp 17-19

ABSTRACT: In the growth and development period of upland wheat in Yunnan, 3 unfavorable weather conditions threaten the harvest: the scarcity of rain at the planting time, frost damage during the nodding and spike formation stages, and the dry windy days of the ripening stage. For a long time, the wheat yield of the province has been poor and unstable because of these conditions. Aside from attempts of introducing breeds outside of the province to combat these conditions, local superior breeds have also been selected to proceed with hybridization and breeding work and a local superior breed 433-2 is the result. In 1975, it was named Yunmai 29. It has been extended in a limited acreage. The yield and other major characteristics, the growth and development period, the disease resistance, and the essential cultivation technique of this breed are explained.

AUTHOR: GUN Zhenyang [1407 6966 3152]
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TITLE: "Research on Anther Culture of Wheat"

SOURCE: Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY]
in Chinese No 6, 25 Nov 80 pp 20-22, 19

ABSTRACT: In breeding new wheat varieties, sexual hybridization is generally the adopted method here and abroad to select the desired materials from random isolation of large quantity of individuals. The process requires many years. At present, anther culture technique has been sufficiently developed to breed haploid tobacco and geng rice, but the anther induction rate of wheat remains too low to be applied in production, however. For several years, the authors have used as materials ordinary hybrid wheat F_1 and a few hybrid F_2 and F_3 to induce anther callus tissue. In the experiment of 1978-79, 123 ordinary wheat hybrid groupings were used to produce 79,615 anthers, and 375 pieces of callus tissues were obtained, amounting to an induction rate of 0.47 percent. The rate of callus tissue induction and the rate of green seedling evolution with 3 different types of culture media are compared. The anther plant offsprings are observed to compare their economic properties with the breeds currently being extended.

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TITLE: "A Survey of the Condition of Occurrence of Rice Bacterial Leaf Spot Disease"

SOURCE: Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY]
in Chinese No 6, 25 Nov 80 pp 26-29

ABSTRACT: In the process of hybrid rice extension, following the epidemic of rice white withering in 1978, a new dangerous disease, rice bacterial leaf spot occurred in 1979 over large areas in Longchuan, Yingjiang, etc. Records indicate that this disease had previously occurred in a scattered fashion only and generally caused no significant damage. The incidence in 1979 and the damage it caused to rice production were the first time in the province. The condition of damage and the symptoms are described. The paper also includes a survey of the pathogenetic factors and their analysis. Measures of prevention and control are suggested.

AUTHOR: LIU Weirong [4151 5019 8833]
YANG Benli [2799 2609 4539]

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TITLE: "Preliminary Investigation of the Occurrence of Wheat Stem Maggot and the Technique of Prevention and Control"

SOURCE: Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY]
in Chinese No 6, 25 Nov 80 pp 30-31

ABSTRACT: European wheat stem maggot (*Meromyza saltatrix*) is one of the important wheat pests. In some parts of Yunnan Province, the damage from this pest has a tendency of gradually expanding in recent years. In China, its distribution has mainly been the spring wheat regions of Nei Monggu, North China, and the Northwest. At present, the known areas of distribution in Yunnan has expanded to include Xundian County of Northeast Yunnan and the Yuqi County of Central Yunnan. It damages mainly wheat and barley, but a number of wild grasses also serve as hosts. This paper includes a morphological description of the imago, the egg, the larva, and the pupa. The life habit of the pest and the method of its prevention and control are also discussed.

AUTHOR: None

ORG: Yunnan Provincial Rice Cold Damage Scientific Research Cooperative Group

TITLE: "Pursue the Advantageous and Avoid the Damaging; Early Planting and Early Transplanting"

SOURCE: Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 1, 25 Jan 81 pp 11-13

ABSTRACT: Cold damage to rice is a relatively common phenomenon in Yunnan Province. Aside from severe damage in years of low Aug temperature, such as 1974 when the loss to rice production reaching the hundred million jin level, the following 3 situations are normally involved: (1) Water deficiency or late maturing of the previous crop cause the rice transplantation to be too late so that locally high temperature period is allowed to pass and tillering, heading etc. are delayed to the unsafe low temperature period. (2) Frequent spring cold waves cause the seedlings to rot or to grow too slowly to be strong. (3) During meiosis of the anther cell the rice plant is very sensitive to low temperature and the ability to fertilize may be lost to cause the plant to be unable to fruit normally. This paper discusses ways of combating these situations, mainly by utilizing the optimal light and temperature conditions of each locality to avoid low temperature damage consciously, especially in areas of high altitudes, to plant and transplant rice early, using such tools as thin plastic film, etc. Data are presented to demonstrate the benefits of early planting and early transplanting.

AUTHOR: YANG Shicheng [2799 0013 2052]
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TITLE: "Identification of Wheat Root Knot Nematodiasis Pathogens"

SOURCE: Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 1, 25 Jan 81 pp 24-26, 23

ABSTRACT: In the winter of 1979, one of the authors, ZHANG Guorui obtained a wheat pest, which was later identified to be *Subanguina radiculicola* (Greeff, 1872) Paramonov, 1967. Although it is also a root parasite of wheat, it is different from the ordinary wheat root knot nematode, *Meloidogyne naasi*, and has never been previously reported in China. This paper reports the process of identifying the parasite, the symptoms of wheat with this disease, its current distribution, and the extent of its damage. Drawings depicting the wheat symptoms and the morphology of the parasite are included.

AUTHOR: ZHENG Jianxing [6774 0256 5887]

ORG: Lincang District Center of Agricultural Sciences

TITLE: "The Quantity and Method of Applying Boron Fertilizer for Rape and The Soil Condition"

SOURCE: Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY]
in Chinese No 1, 25 Jan 81 pp 30-32

ABSTRACT: Ordinarily, 0.002 to 0.003 boric acid or borax solution is sprayed on rape and the effect is generally believed to vary with the time of the application. It is generally reported to be seedling time > budding time > blooming time, but there are also reports claiming that the effect is better when the boron fertilizer is sprayed late. In the granitic red earth soil of Yongquan Brigade, obvious boron deficiency phenomenon was observed and an experiment was carried out to combine large area survey with laboratory analysis for studying the quantity and method of applying boron fertilizer. Data of field tests and laboratory experiments are reported.

AUTHOR: HE Qingrui [6320 1987 3843]
WU Yunlong [0702 0061 7893]
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ORG: None

TITLE: "A Superior Quality High Yield Soft Rice Variety--Dianrui 409"

SOURCE: Kunming YUNNAN NONGYE KEJI [YUNNAN AGRICULTURAL SCIENCE AND TECHNOLOGY]
in Chinese No 1, 25 Jan 81 pp 47-48

ABSTRACT: Dianrui 409 is the product of 5 years (9 seasons) hybridization work of crossing the famous Yunnan soft rice Haomuxi with the xian rice Keqing No 3 which has a good affinity and a low starch content. The breeding and selection work was performed on the South Sea shore in Hainan Island of Guangdong Province as well as in such areas as Yuanjiang, Jinghong, Ruili, etc. of Yunnan Province. The finalized product preserves the taste and texture of the original soft rice yet is fluffy and not sticky. The nutrient content is also superior. In test cultivation cases, 81.25 percent netted a yield increase and 18.75 percent a reduction over the local farm varieties. The highest yield reported of Dianrui 409 is 1473 jin/mu in 1978 at Ruili Farm Experimental Station. The properties of Dianrui 409 and its essential cultivation technique are described.

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CSO: 4009

AUTHOR: None

ORG: Youfang Commune Agricultural Station, Yangzhong County, Jiangsu Province

TITLE: "Technique of Thinning Rice Paddy Twice to Retain Rows of Seedlings"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWS-LETTER] in Chinese No 6, 15 Jun 80 p 1-

ABSTRACT: In past 2 years, with the expansion of dual-season rice acreage and the extension of late maturing high yield breeds, Youfang Commune had had trouble of meeting the intense labor demands of 2 busy seasons a year. A technique was first devised to seed directly and to thin out seedlings to form rows (see the No 6, 78 issue of the journal.) On that successful basis, it has been further developed to involve 2 steps. After germination, the sprouts of a width of 3 cun are removed from every 5 cun of the paddy to retain seedlings in rows of a width of 2 cun and in numbers amounting to 2/5 of all sprouts in the paddy. As the colony structure and the light condition are thus improved, the retained seedlings are allow to grow tall and strong before the second thinning. This time, out of the 2 cun rows, seedlings in a width of 1 cun are pulled out to retain about 35 seedlings in a space measuring 1 cun x 1 chi, about 350,000 seedlings in one mu of paddy. These are allowed to grow in their original site throughout the stages of heading and ripening. Not very much detail of this 2-step method is given in the paper, however.

AUTHOR: None

ORG: Aiguo Commune Agricultural Station, Ju County, Shandong Province

TITLE: "Preparing Seeds of Geng Type Hybrid Rice in the Summer Produces High Yield"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWS-LETTER] in Chinese No 6, 15 Jun 80 p 3-

ABSTRACT: For 2 years now, Aiguo Commune has prepared hybrid rice seeds following the wheat crop in the summer; the yield has improved consistently. In 1979, the 5 units of the commune had 96 mu of seedbeds of this type and produced 269 jin/mu on the average. The science research team in charge of the subject had 15 mu and produced an average yield of 380 jin/mu. Of these 15 mu, the yield of 4 mu was as high as 436 jin/mu. The paper devotes most of the space to describe the detailed procedures, including weeding, fertilizer application, seedling transplant, artificial fertilization, leaf-trimming, etc. for preparing hybrid rice seeds in the summer.

AUTHOR: LIU Cunan [0491 1317 1344]

ORG: Wangfu Middle School, Dianbai County, Guangdong Province

TITLE: "Parthenogenesis in Rice"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWS-LETTER] in Chinese No 6, 15 Jun 80 p 4-

ABSTRACT: Through nonextracorporeal methods, in 1976-77, the author and colleagues induced parthenogenetic propagation from regular, chemically detasseled, and line cultured hybrid offsprings, mutant stalks of laser or radiation treatment, and offsprings of male sterile lines. One of the following is used for induction: 20 ppm of naphthylacetic acid; 10-30 ppm of indole acetic acid; 3-30 ppm of 2,4-D; or 30 ppm of gibberellin, and some haploid seeds are obtained. The successful induction frequency varies with the agent. Cytological identification reveals the chromosome to be $n = 12$ with most of the haploid seeds. With a few of them $n = 14$ to 20. Segregation phenomenon appears to discontinue among the parthenogenetic F_3 . All stalks in the field have uniform characteristics, basically.

AUTHOR: PANG Zhenhua [1690 2182 5478]

ORG: Sanping Farm, Wulumuqi [Urumchi] City, Xinjiang

TITLE: "Improving Heterosis of Hybrid Corn With Sunlight Prenatal Education"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWS-LETTER] in Chinese No 6, 15 Jun 80 p 8

ABSTRACT: Inspired by the paper of GENG Qinghan [5105 1987 3352] of Nei Monggu College of Agriculture: "NEW METHOD OF BREEDING CORN--PRENATAL EDUCATION OF PREMATURE SEEDS" (see the No 8, 78 issue of the journal), an experiment is designed to condition developing embryonic seeds 15 to 20 days from the time of fertilization) with the sunlight, aridity, and high temperature condition of the period between late June and early to middle July of the Wulumuqi region. The 1978 experiment of in bred lines reveals that this prenatal sunlight education produces obvious drought resistance. After ripening, the seeds are full, with a test weight 20-31 percent higher and a yield 15-25 percent better than the control. The experimental process is described.

AUTHOR: GAO Liang [7559 2733]

ORG: Tianjin Municipal Institute of Soil and Fertilizer Research

TITLE: "Diagnosis, Prevention, and Treatment of Zinc Deficiency Disease of Corn"

SOURCE: Beijing NONGYE KEJI TONGJUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWS-LETTER] in Chinese No 6, 15 Jun 80 pp 27-28

ABSTRACT: Zinc deficiency of corn will cause the veins of the leaves to turn white and the leaves to be dry and necrotic. It is also called "dry leaf disease." In recent years, due to the fact that zinc fertilizer has not yet been applied in some regions where the soil lacks zinc, the yield of corn does not increase in spite of continuous increase of crop repeating index. Comprehensive surveys, multiple-point sampling, and atomic absorption spectrophotometric determination reveal that the zinc content of soils of most areas of Tianjin is about 75-347 ppm, but their contents of effective state zinc are extremely low, only about 0.12-0.90 ppm. The zinc deficiency disease is especially serious for corn growing in sandy soils of these areas. The paper describes the distribution, the symptom, and the pathogenesis of corn zinc deficiency disease and experiments on the effect of zinc fertilizer application for controlling the disease.

AUTHOR: LIN Zhigu [2651 1807 7711]

ORG: Xingsi County Bureau of Agriculture, Jiangxi Province

TITLE: "Occurrence, Prevention, and Treatment of Rice Yellow Stunt Disease"

SOURCE: Beijing NONGYE KEJI TONGJUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWS-LETTER] in Chinese No 6, 15 Jun 80 pp 29p 29

ABSTRACT: Xingsi County began to have scattered cases of yellow stunt disease of rice in 1968. After 1975, the condition had become more severe year after year, but the incidence remained low, generally less than 1 percent until 1978. During that year, the disease involved more than 30,000 mu, with a rate of diseased stalks varying from 9 to 88 percent. Effective measures, including application of furadan to control the rice leafhopper population in the paddies, improving the irrigation technique, application of fast acting nitrogen fertilizer, draining the paddy and cutting roots of diseased plants, and application of table salt and grass ash in the paddies, adopted in 1979 have obviously reduced the area and the incidence of the disease.

AUTHOR: XIE Dingyan [6200 7844 6056]
LIAN Quan [7281 5425]
LI Jingran [2621 2529 3544]

ORG: All of Langfang School of Agriculture, Hebei Province

TITLE: "Root Breaking Technique of Cultivating Wheat"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWS-LETTER] in Chinese No 10, 15 Oct 80 pp 7-8

ABSTRACT: China has a long history of applying transplantation technique to wheat culture but the technique requires a considerable skill, the seedbeds take up a good deal of land, and the labor consumption is high. Although it may produce a 20 percent increase in yield, to extend it remains very difficult. For the purpose of developing the advantages of this technique, the authors began in 1978 to study the root-breaking technique of cultivating wheat. With this technique, the roots of wheat seedlings are completely broken off about one month before overwintering and the field is then flooded to soak the plants to induce the development of new roots. Afterwards, the field management should be the same as that of transplanted wheat field. Preliminary experiments of these 3 years indicate that this technique may be used to substitute for transplantation. The yield may be increased about 15 percent on the average, compared with the direct seeding method. From every mu, about 50-100 jin more of wheat may be harvested. The technique and the reason for the yield increase effect are explained.

AUTHOR: ZHANG Daming [1728 6671 2494]
GUAN Fukui [7070 4395 7608]
SONG Xueyu [1345 1331 3768]

ORG: ZHANG, GUAN of Baicheng City Vegetable Office; SONG of Baicheng District Weather Bureau, Jilin Province

TITLE: "Utilizing the Residual Heat of the Waste Water of Power Plant to Produce Vegetables"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWS-LETTER] in Chinese No 10, 15 Oct 80 pp 20-21

ABSTRACT: Baicheng District is located at 45°38' N. Lat, with 120-130 days of frostfree period a year, a frozen earth layer of about 2.2 m, and a minimum temperature of -39°C. Vegetables cannot be raised during the period from the middle of Oct to the middle of Apr. The drainage channel for the warm waste water of Baicheng Power Plant is as long as 10 li, draining 2,500 tons of water per hour of a temperature of about 30°C. Assuming that water of a temperature of 15°C may be used to grow vegetables, the city's Bureau of Vegetables, the Bureau of Science and Technology, and the Bureau of Hydroelectric Power proceeded in 1973, 74 to experiment with the possibility. Three greenhouses have since been built, with a total area of 2,000 m². The structure of the greenhouses, the production results, and the meteorological conditions are reported.

AUTHOR: QIN Geng [0530 5087]

ORG: Rear Support Department, Wuhan Troops, Chinese People's Liberation Army

TITLE: "Introducing a New Method of Fattening Porkers Fast--A Fast Fattening Method With Drugs"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWS-LETTER] in Chinese No 10, 15 Oct 80 p 35

ABSTRACT: Based upon the nutritional requirements of pigs for growth, their physiological characteristics, and the existing condition of the troops, the assistant veterinary physician of a certain troop of Wuhan, QAI Jinchun [5591 6651 2504] devised a new method of using drug additives. This paper reports experiments with feeding a group of porkers with 4 drugs: copper sulfate, sodium hydrogen carbonate, urea, and sulfur, added to the feed, a control group A with ~~more feeding~~ times per day, and a control group B with regular feed. The pigs fed with feed with the 4 drugs added for 55 days may gain an average of 2 jin per day to fatten a 100 jin pig to 200 to 240 jin. The reason for the fattening action of the 4 drugs in pigs is analyzed.

AUTHOR: LIU Jicheng [0491 4814 2052]

ORG: Guangdong College of Mining and Metallurgy

TITLE: "Action of Magnetized Water on Paddy Rice"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY-NEWS-LETTER] in Chinese No 11, 15 Nov 80 p 4

ABSTRACT: Compared with ordinary water, when magnetized water is used to cultivate paddy rice, the seeds absorb the water and become swollen faster, the germination rate is high, and orderly, the root and bud ratio is suitable, the rate of strong seedlings is higher, seedlings grow faster after transplantation, the stalks are bigger and stronger, the adversity resistance is better, and the heading and fruiting rates are higher also. An yield increase of 10 percent may result, with the highest reaching 30 percent. It is the preliminary opinion of the author and colleagues that after the paddy water has been treated with a magnetic field, the molecule groups are disturbed to produce changes in the micro structure, mainly an abnormal change in the hydrogen bond to cause changes in certain characteristics. Changes occurring to rice plants and grains when they are treated with magnetized water instead of ordinary water are analyzed, but there is no mention of the technique or process used to magnetize the water in the paddy.

AUTHOR: ZENG Jishu [2582 0679 1859]

ORG: Sugar Cane Research Office, Liucheng County Bureau of Agriculture, Guangxi

TITLE: "Characteristics of Embryonic Cell Sugar Cane Seedling and Its cultivation Technique"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWS-LETTER] in Chinese No 11, 15 Nov 80 pp 23-24

ABSTRACT: If stem of sugar cane is used for asexual propagation, the process is slow, and 1,000-1,500 jin of stems are needed to grow enough seedlings for one mu of sugar cane. It is much faster with embryonic cell. With stem culture, after the development of permanent roots, the seedling is capable of absorbing soil nutrients and adapting to the soil environment. It is not the case with cell seedlings, however. A process of training and adaptation is required. During that period, the temperature must be controlled at 22-35°C and the soil must be neither wet nor dry and be very well ventilated. These and other essentials for growing sugar canes from cell seedlings are explained. The paper does not deal with the process of culturing embryonic cell seedlings of sugar cane, however. The author and colleagues propagated cell seedlings in 1979, in sufficient number to plant several tens of mu. That experiment is reported in NONGYE KEJI TONGXUN No 10, 79.

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